

## **Transportation and Strategic Mobility**

### ***Research Areas***

|                                     |                             |                                     |
|-------------------------------------|-----------------------------|-------------------------------------|
| Airlift Capacity                    | Alternative Fueled Vehicles | Costing                             |
| Impact of Transition to AEF and AEW | In Transit Visibility       | Organic vs. Commercial: Optimal Mix |
| Material Handling Equipment         | Modal Choice                | Time Definite Delivery              |
| Total Asset Visibility              | Pallet Packing              | Transportation Network Design       |

### ***Recent Research***

Analysis of the lease vs. buy decision for general-purpose vehicles  
Least cost Aerial Port network  
Fly-to-fail compared to replacement at mean time between failures maintenance policies  
Tactical vs. Strategic role of the C-17  
Cost analysis of flying hour cost of the C-141  
Adequacy of commercial railcar inventory to support two near-simultaneous MTW  
Use of RF technology at aerial ports for ITV

For further information or to suggest a related thesis topic, please contact:  
Maj Stephan P. Brady; Dr. William A. Cunningham, III  
Dr. James T. Moore; Maj Stephen M. Swartz    Departmental web site: <http://en.afit.edu/ens/>

## **Campaign Planning and Execution: Optimizing the J3-J4 Link**

### ***Research Areas***

Tradeoff analysis of weapon system assignment to missions  
Multi-Goal optimization of alternative force packages  
Lift constrained force package analysis  
Efficient conversion of target set objectives to Master Air Tasking Orders  
Impact of Transition to AEF and AEW  
Time based asset valuation of alternative force mixes (deployment and sustainment)

### ***Recent Research***

Under the Defense Advanced Research Project Agency (DARPA) Advanced Logistics Project (ALP), AFIT has been building a campaign planning model that assists decision makers in selecting goal optimal weapon system mixes (force packages) while simultaneously considering lift and supportability constraints. Major issues studied have involved analysis of both intrinsic (weapon-mission specific) and extrinsic (scenario-environment dependent) issues affecting the value or “utility” of various force packages to a supported commander. The model seeks to maximize value over time (from deployment through sustainment over the course of the campaign) for the force mix given lift and logistics constraints.

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